UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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Technology Center 2100

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 10/039,018
Filing Date: December 31, 2001
Appellant(s): NEUFELD ET AL.

Dan C. Hu
(Reg. No. 40,025
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 9/6/2006 appealing from the Office action mailed 4/5/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

| 6,480,893 | KRIEGSMAN | 11-2002 |
| 6,230,233 | LOFGREN et al. | 5-2001 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2.   Claims 1-19 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kriegsman (US PAT. 6,480,893) in view of Lofgren et al. (US PAT. 6,230,233 hereinafter

Lofgren).

Regarding claim 1, Kriegsman disclose a method comprising the step of identifying

whether a file (40 or 42, figure 1) on a read/write storage medium (30, figure 1) is a static file or

a dynamic file and migrating the file to a secondary server based on the whether the file is a

static file or not (abstract, col. 5 line 52 through col. 6 line 17 and col. 6 line 65 through col. 7

line 19). Kriegsman differs from the claimed invention in not specifically teaching migrating the

file to a dynamic region of the read/write storage medium if the file is a static file, and migrating

the file to a static region of the read/write storage medium if the file is a dynamic file. However,

Lofgren teaches a computer system comprising flash electrically erasable and programmable

read only memory (11, figure 1), i.e., read/write storage medium, is divided into a plurality of

memory banks for data storage (col. 3 lines 16-28 and col. 6 lines 23-55), which in respond to

the memory operation from/to the micro-processor (17, figure 1) via the memory controller (13,

figure 1), and the memory controller is further manages operation of the EEPROM memory in a

way to maximize the lifetime of the memory system by avoiding uneven use of any one part of it

(col. 3 lines 3-15). In addition, Lofgren teaches the EEPROM memory is further calculate the

rewrite cycle of the each bank wherein the EEPROM memory is divided into most heavily used

bank, i.e., dynamic region, and least used bank, i.e., static region, by the result of the calculation

based on the rewrite/erase cycle, and data is transferred between the most heavily used and least

used banks in the way of swapping the data in between of these banks (col. 4 line 46 through col.

5 line 31 and figure 5). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the read/write storage medium of Kriegaman in having the steps of migrating the file to a dynamic region of the read/write storage medium if the file is a static file and migrating the file to a static region of the read/write storage medium if the file is a dynamic file, as per teaching by the storage system of Lofgren, because it allows for extending overall memory system lifetime without having to provide any replacement groups of the memory cells which maximize the lifetime of the memory system by avoiding uneven use of any one part of the memory system.

Regarding claim 2, Lofgren discloses the method of counting a number of rewrite cycles of the file via the cycle count field (73, figure 4) in header portion (col. 6 line 56 through col. 7 line 28).

Regarding claim 3, Lofgren discloses the method of comparing the number of rewrite cycles of the file to a predetermined rewrite cycle threshold (col. 5 lines 56-65).

Regarding claims 4-5, Lofgren discloses the predetermined rewrite cycle threshold is associated with a read/write storage medium identifier and a drive identifier for the read/write storage medium (col. 4 lines 1 1-31).

Regarding claim 6, Lofgren discloses the method wherein the predetermined rewrite cycle threshold is based on self-testing by performing rewrite cycles to a data block of the read/write storage medium until the data block is unstable (col. 4 lines 12-61 and col. 6 line 56 through col. 7 line 62).

Regarding claims 7-8, Lofgren discloses the method wherein the predetermined rewrite

cycle threshold and the number of rewrite cycles of the file are stored in a file allocation table

(col. 4 lines 32-61).

Regarding claims 9-11, the difference between Lofgren and the claimed invention is the

claims specifically recite the read/write storage medium comprises a compact disk read/write

disk, a tape drive, a floppy disk drive. However, having this vary type of memory does not have

a disclosed purpose nor is this kind of the memories disclosed to overcome any deficiencies in

the prior art. As such, the read/write medium may have been of any kind of the memory. In

addition, since Lofgren discloses the read/write medium is a flash electrically erasable and

programmable read only memory (col. 1 lines 5-19 and col. 3 lines 5-28), the ordinary artisan

would realize a possible kind of the memories can be applied as the current technology would

warrant. Accordingly, it would have been an obvious matter of design choice to utilize the

storage system of Lofgren wherein the read/write storage medium is a flash electrically erasable

and programmable read only memory as disclosed supra, since applicant has not disclosed that a

flash electrically erasable and programmable read only memory as opposed to other kind of

memories, overcomes a deficiency in the prior art or is for any stated purpose.

Regarding claim 12, Lofgren discloses the method wherein the read/write storage

medium comprises an electrically erasable medium, i.e., flash electrically erasable and

programmable read only memory (col. 1 lines 5-19 and col. 3 lines 5-28).

Regarding claim 13, the limitations of the claim are rejected as the same reasons set forth

in claim 1.

Regarding claim 14, the limitations of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 15, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claim 16, Kriegsman discloses the file system comprising means for identifying a file type of the file, wherein the file is initially identified as static or dynamic based on the file type of the file (col. 5 line 58 through col. 6 line 5 and col. 6 line 67 through col. 7 line 32).

Regarding claim 17, Kriegsman discloses a computer system comprising a processor-executable file system (28, figure 1) adapted to identify whether a file on a read/write storage medium (30, figure 1) is a static file or a dynamic file, and migrating the file to a secondary server in response to identifying the file as a static file or not (abstract, col. 5 line 52 through col. 6 line 17 and col. 6 line 65 through col. 7 line 19). Kriegsman differs from the claimed invention in not specifically teaching the system comprising a processor-executable file system adapted to migrate the file to a dynamic region of the read/write storage medium, and migrating the file to a static region of the read/write storage medium. However, Lofgren teaches the computer system comprising a micro-processor (17, figure 1) to execute the memory access to the flash electrical erasable and programmable read only memory, i.e., read/write medium via the memory controller (13, figure 1), wherein the EEPROM is divided into a plurality of memory banks for data storage (col. 3 lines 16-28 and col. 6 lines 23- 55), and the memory controller is further manages operation of the EEPROM memory in a way to maximize the lifetime of the memory system by avoiding uneven use of any one part of it (col. 3 lines 3-15). In addition Lofgren

teaches the EEPROM memory is further calculate the rewrite cycle of the each bank wherein the

EEPROM memory is divided into most heavily used bank, i.e., dynamic region, and least used

bank, i.e., static region, by the result of the calculation of the rewrite/erase cycle, and data is

transferred between the most heavily used and least used banks in the way of swapping the data

in between of these banks (col. 4 line 46 through col. 5 line 31 and figure 5). Therefore, it would

have been obvious to a person of ordinary skill in the art at the time the invention was made to

modify the storage system of Kriegsman in having a processor-executable file system adapted to

migrate the file to a dynamic region of the read/write storage medium, and migrating the file to a

static region of the read/write storage medium, as per teaching by the storage system of Lofgren,

because it allows for extending overall memory system lifetime without having to provide any

replacement groups of the memory cells which maximize the lifetime of the memory system by

avoiding uneven use of any one part of the memory system.

Regarding claim 18, the limitations of the claim are rejected as the same reasons set forth

in claim 2.

Regarding claim 19, the limitations of the claim are rejected as the same reasons set forth

in claim 3.

Regarding claim 28, the limitations of the claim are rejected as the same reasons set forth

in claim 16.

Regarding claim 29, the limitations of the claim are rejected as the same reasons set forth

in claim 15.

Regarding claim 30, the limitations of the claim are rejected as the same reasons set forth

in claim 2.

Regarding claim 31, the limitations of the claim are rejected as the same reasons set forth

in claim 15.

(10) Response to Argument

Appellant's arguments have been fully considered and are deemed not persuasive for the

following reasons.

In response to appellant's argument that there is no suggestion to combine the references,

the examiner recognizes that obviousness can only be established by combining or modifying the

teachings of the prior art to produce the claimed invention where there is some teaching,

suggestion, or motivation to do so found either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d1071, 5 USPQ 2d

1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ 2d 1941 (Fed. Cir. 1992). In this

case, Kriegsman teaches a memory system capable of identifying whether a file in a read/write

storage medium (30, figure 1) is a static file (42, figure 1) or a dynamic file (40, figure 1 and col.

5 lines 58-65) and migrating the file to a secondary sever (46, figure 1) if the file is a static file

(col. 6 line 67 through col. 7 line 8, i.e., copies those capacity consuming static data files to one

or more secondary web server 16), so that the read/write storage medium (30, figure 1)

containing a first region for storing static files and a second region for storing dynamically files.

Note, the previous Office action clearly explained Kriegsman differs from the claimed invention

in not specifically teaching the read/write storage medium to migrate a file to a dynamic region if

the file is a static file and migrating the file to the static region if the file is a dynamic file.

However, Lofgren teaches a technique of extending overall memory system lifetime without

having to provide replacement groups of memory cell (col. 2 lines 32-35) by dividing the

memory system into most heavily used bank, read as dynamic region, and most least used bank,

read as static region, and transferring data between the most heavily used region and most least

used region based on rewrite/erase cycle (col. 4 line 46 through col. 5 line 31) such that one skill

in the art would recognize Lofgren teaches to migrate dynamic files from dynamic region to

static region and to migrate static file from static region to dynamic region. Note both Kriegsman

and Lofgren both are related to a memory system. Thus, it would have been obvious to combine

Kriegsman as per teaching of Lofgren. The motivation of combining Kriegsman with Lofgren is

to extend overall memory system lifetime without having to provide replacement groups of

memory cell (see Lofgren, col. 2 lines 32-35). Based on the teaching of Kreigsman and Lofgren,

a person of ordinary skill in the art would clearly have been motivated to modify the teaching of

Kriegsman based on the teaching of Lofgren. Therefore, examiner has established a *prima facie*

of obviousness. Claim 1 and its dependent claims are therefore rejected under Kriegsman and

Lofgren. Independent claims 13 and 17 and their respective dependent claims are also similarly

rejected.

In response to appellant 's argument that the goal of Lofgren, which is to move data

between heavily used and least used banks of an EEPROM memory, is clearly inconsistent with

the goal of Kriegsman, which is to separate dynamic files and static files on completely different

storage media associated with different primary and secondary web servers, the test for

obviousness is not whether the features of a secondary reference may be bodily incorporated into

the structure of the primary reference; nor is it that the claimed invention must be expressly

suggested in any one or all of the references. Rather, the test is what the combined teachings of

the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642

F.2d 413, 208 USPQ 871 (CCPA 1981). In addition, appellant 's argument is misleading because

the previous Office action clearly stated that Kriegsman teaches a memory system capable of

identifying whether a file in a read/write storage medium (30, figure 1) is a static file (42, figure

1) or a dynamic file (40, figure 1 and col. 5 lines 58-65) and migrating the file to a secondary

sever (46, figure 1) if the file is a static file (col. 6 line 67 through col. 7 line 8, i.e., copies those

capacity consuming static data files to one or more secondary web server 16), so that the

read/write storage medium (30, figure 1) containing a first region for storing static files and a

second region for storing dynamically files. The use of Lofgren is for teaching a technique of

extending overall memory system lifetime without having to provide replacement groups of

memory cell (col. 2 lines 32-35) by dividing the memory system into most heavily used bank,

read as dynamic region, and most least used bank, read as static region, and transferring data

between the most heavily used region and most least used region based on rewrite/erase cycle

(col. 4 line 46 through col. 5 line 31). Therefore, it would have been obvious to a person of

ordinary skill in the art at the time the invention was made to modify the read/write storage

medium Kriegsman utilizing the teaching of Lofgren to transfer data between different regions in

order to extend overall memory system lifetime without having to provide replacement groups of

memory cell. Clearly, modifying Kriegsman based on the teaching of Lofgren would not defeat

the intended purpose of Kriegsman because Lofgren clearly defined the invention is dedicated to

mass digital data storage system, which can be used as storage component of Kriegsman.

In response to Appellant's argument that the combination of Kriegsman and Lofgren fails

to teach or suggest the step of identifying whether a file on a read/write storage medium is a

static files or a dynamic files comprising the step of comparing the number of rewrite cycles of the file to a predetermined read/write cycle threshold. It is noted that Kriegsman clearly teaches a memory system capable of identifying whether a file in a read/write storage medium (30, figure 1) is a static file (42, figure 1) or a dynamic file (40, figure 1 and col. 5 lines 58-65) and Lofgren teaches to compare the number of rewrite cycle of the file to a predetermined read/write threshold (col. 5 lines 56-65, i.e., comparing the number of block writes which have occurred to the present time in each of memory banks, either by total number of block write or some types of average of cycles of block within the bank, by monitoring the physical memory usage). Thus, the combination of Kriegsman and Lofgren teaches all elements of claim 3 (and its dependent claims). Dependent claims 15 and 19 are rejected for similar reasons.

In response to Appellant's argument that the combination of Kriegsman and Lofgren fails to teach or suggest the predetermined rewrite cycle threshold is based on self-test by performing rewrite cycles to a data block of the read/write storage medium until the data block is unstable, it is noted that Lofgren clearly teaches a field to maintain a count of the number of times that the block has been erased or rewritten (col. 6 lines 56-58) and a process to calculate an average block cycle count for each bank, i.e., performing rewrite cycles to a data block of the read/write medium, and then to compare whether there is such an imbalance of use, of the various bank that a wear leveling operation should be take place, i.e., until the data block is unstable (col. 7 lines 21-28). In view of foregoing, it is respectfully submitted that claim 6 is further rejected under the combination of Kriegsman and Lofgren for the above reasons.

In response to Appellant's argument that the combination of Kriegsman and Lofgren fails to teach or suggest reclassifying a file from an initial identification of a static or a dynamic file as

recited in claims 29 and 31, it is noted that Kriegsman clearly teach the step of identifying

whether the file is a static file or a dynamic file from the initial identification of a static file or a

dynamic file (col. 3 lines 32-42, i.e., the storage medium further stores at least one loop up table

having specific criteria pertaining to the data files and allocating each specific data file based on

specific criteria in the loop up table pertaining to the specific data files) and Lofgren teaches the

step of reclassifying the file based on a number of rewrite cycles to the file (i.e., transferring

data, read as reclassifying data, between most heavily used bank and least used bank based on a

number of rewrite cycles within memory banks (col. 5 lines 18-31 and lines 56-65). Thus, the

combination of Kriegsman and Lofgren teaches the claimed limitations.
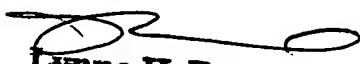

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related

Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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